Impact of knowledge brokering on performance heterogeneity among business models

Sujith Nair, Arsalan Nisar, Miguel Palacios and Felipe Ruiz

Abstract

Purpose – The strategic management literature lacks a comprehensive explanation as to why seemingly similar business models in the same industry perform differently. This paper strives to explain this phenomenon.

Design/methodology/approach – The model is conceptualized and accompanied by a case study on the airline industry to explain knowledge brokerage that creates value from the effective utilization of knowledge resources acquired from intra- and inter-firm environments.

Findings – The model explains a cyclical view of business model flexibility in which the knowledge-based resource accumulation of the business model is spread across the intra- and inter-firm environments. Knowledge brokerage strategies from the inter- and intra-firm environments result in improved performance of the business model. The flexibility that the business model acquires is determined by how efficiently resource accumulation is aligned with its external environment.

Originality/value – The paper effectively integrates the concepts of knowledge brokerage and business models from a resource accumulation-based view and simultaneously arrives at the performance heterogeneity of seemingly similar business models within the same industry. It has performance implications for firms that start out without any distinct resources of their own, or that use an imitated business model, to attain better performance through business model evolution aligned with successful knowledge brokerage strategies. It adds to the resource accumulation literature by explaining how resources can be effectively acquired to create value.

1. Introduction

Over the years, strategy scholars have attempted to address the understanding of determinants of firm performance to answer the fundamental question of how firms differ and why they perform differently. This has been one of the major discussions in strategy literature, and academics from various backgrounds have focused on explaining firm performance and identifying its determinants (McGahan and Porter, 1997). Houthoofd *et al.* (2010) explain that researchers within the industrial organization tradition have argued that the industry itself is a key determinant of firm performance and contend that the structural features of an industry effect the competitive position of all the firms in that specific industry (Chang and Singh, 2000). However, industrial organization literature has failed to provide a thorough clarification for intra-industry heterogeneity in performance and has stimulated strategy researchers to focus on the firm itself (Chang and Singh, 2000). It has resulted in firms not being viewed as identical "black boxes" in a given market structure but as

dynamic collections of specific capabilities influenced by differing organizational structures and specific strategic decisions (Hawawini *et al.*, 2003).

As a result, the question of why firms perform differently within the same industry remains central to existing strategy research. In answering this question, researchers have regarded the resource-based view (RBV) as the underlying basis for explaining firm performance difference and superiority. According to the neoclassical economics view of organizations, given the same resources and environmental conditions, all firms will take the same actions, resulting in undifferentiated performance profiles among the set of firms. Scholars of organizational strategy and entrepreneurship disagree with this proposition, as firms may take different actions, even when faced with the same opportunity, as a result of varied entrepreneurial conjectures of the most profitable course of action (Shane, 2000). Firms with diverse resource endowments are even more likely to take different actions, also leading to heterogeneous performance results. According to the resource-based view, firms in the same industry perform differently because, even in equilibrium, firms differ in terms of the resources and capabilities they control (Amit and Schoemaker, 1993; Barney, 1986; Dierickx and Cool, 1989; Penrose, 1959; Peretaf, 1993; Wernerfelt, 1984).

Business models have a profound influence on firm performance heterogeneity among intra-industry firms (Zott and Amit, 2008; Afuah and Tucci, 2001) as they "try to find new ways of doing business that will disrupt an industry's existing competitive rules, leading to the development of new business models" (Ireland *et al.*, 2001). Advancing our knowledge of the linkage between performance heterogeneity and the business model is important. Following a thorough review of the current literature, we describe performance heterogeneity as a dynamic shift of alteration in a firm's performance in relation to other firms competing in the same industry, which can be attributed to a comprehensive set of beliefs, logic, resources and capabilities, given that market imperfections are existent.

The resource-based view commonly links business models to resource and allocation (Garnsey *et al.*, 2008). Value can also be created through revolutionary business models. According to Hamel (1999), to thrive in the "age of revolution" firms must develop new business models in which both value creation and value capture occur in a value network, which can include suppliers, partners, distribution channels, and coalitions that extend the firm's resources. Mangematin *et al.* (2003) present a business model typology within the French biotech sector based on the financial, human, and social capital resources that drive organizational forms. The inclusion of knowledge and dynamic capabilities into the resource-based view paved the way for more linkages with the business model. Venkataraman and Henderson (1998) suggest that leveraging traditional and knowledge assets enables virtual organizing as a new business model. The resource-based view has permeated much of the research on business models, influencing theory building and empirical analysis. Consensus has, so far, not emerged on how business models interact with appropriateness regimes, and much of the research on business models framed within the resource-based view does not clarify how business models differ from product market-positioning strategy. The business model develops in parallel with the entrepreneur's knowledge and a resource base as the organizational structure is developed that will ultimately create value by exploiting the underlying opportunity (George and Bock, 2011). Thus, the business model is both an enabling and limiting structure for the firm's accumulation

and consumption of resources (e.g. Amit and Zott, 2001; Garnsey *et al.*, 2008; Mahadevan, 2000; Morris *et al.*, 2005; Tracey and Jarvis, 2007).

From a resource-based viewpoint, even though it has been argued that business models influence firm performance, the factors that affect the ability to create a business model with an inherent level of flexibility that will enable it to evolve, adding value and thus resulting in superior firm performance, have not yet been researched. In times of rapid change, uncertainty and turbulence, the relationships between the business organization and its environment change, and the organization should be aware and respond to this change in order to survive. The functional logic that drives the organization should be flexible, timely, readily accessible, accurate, and compatible with other systems in both cross-functional and cross-organizational capacities. It has been argued that, as uncertainty increases, firms are finding themselves facing a high ratio of doubt in terms of knowledge, as decisions are based on old assumptions leading to unfortunate outcomes (McGrath and MacMillan, 2009). Clearly, it is possible to infer that the firm operating a traditional business model (for example, a full service carrier like Alitalia) struggles to remain competitive. According to Eriksson and Penker (2000), one can identify options for change and superior performance by investigating the role of business models.

While entrepreneurship literature illustrates the importance of initial resource choices made by entrepreneurs, research on how entrepreneurs accumulate resources from multiple partners, competitors and the intra and inter-industry environments to build capability is meager or, at best, anecdotal. The resource-based view focuses on sets of resources that confer a sustained competitive advantage to firms (Barney, 1991). However, the resource-based view does not address the means by which unique sets of resources are accumulated, especially by entrepreneurs (Alvarez and Busenitz, 2001). Recent literature on the resource-based view focuses on resource accumulation and suggests that the understanding of the process by which entrepreneurs acquire resources is critical to understanding the resource-based view. Wernerfelt (1984) raises the question that still remains unanswered – what happens if firms do not have any resource strengths?

Research objectives and structure

The main research objective of this paper focuses on reasons for performance heterogeneity in business models of firms that operate in the same industry. It should be noted that our conceptual investigation deals with performance heterogeneity among seemingly similar business models in the same industry. In this conceptual study, we introduce "knowledge brokerage" (Hargadon and Sutton, 2000) from an intra-firm and inter-firm environmental perspective as a way to enable firms to introduce ideas in their business models, thereby helping them to evolve and enable better performance. Knowledge brokering is a systematic approach to seeking external ideas from people in a variety of industries, disciplines, and contexts, and then combining the resulting lessons in new ways (Davidson and Billington, 2010). We do not consider knowledge brokerage as something that the competitor imitates and is already obvious in the industry. Instead it is a knowledge acquisition that transcends ideas into value added not foreseen by the innovator.

We integrate the scholarly dialogue on business models to emphasize the link between knowledge brokering from a resource-based view and business models to

explain performance heterogeneity among firms. We also investigate the circumstances under which knowledge brokering capability will be associated with higher levels of performance. We create a model to explain the role of knowledge brokering in superior resource accumulation methods for firms through the medium of business models, and how this influences the components and environments of a business model. The case of the airline industry is used to illustrate the different knowledge brokerage practices that occur as a part of resource accumulation.

2. Business model flexibility and resource-based view

Even though the firm's activities with its network partners have been used as the basis for most business model research, authors argue that firms do not execute their business models in a competitive vacuum (Hamel, 1999), and, more recently, that firms compete based on their business models (Casadesus-Masanell and Ricart, 2010). Markides and Charitou (2004) contend that the business model presents itself as a potential source for competitive advantage. Zott *et al.* (2011), citing various authors, argue that the originality presented by new, effective models can result in superior value creation and replace the old way of doing things to become the standard for the next generation of entrepreneurs.

In their effort to explain firm performance based on business models, Afuah and Tucci (2001) recognize business models as "the method by which a firm builds and uses its resources to offer customers better value and to generate profit in doing so", and, thus, unify competitive advantage gained through business models and firm performance. The empirical work of Zott and Amit (2007) see the business model as an independent variable, moderated by the environmental link to firm performance. In the empirical study on firm performance by Patzelt *et al.* (2008), the business model is introduced as a variable moderating the effect of top management team composition and organizational performance. "Each business model has its own development logic which is coherent with the needed resources – customer and supplier relations, a set of competencies within the firm, a mode of financing its business, and a certain structure of shareholding" (Mangematin *et al.*, 2003).

Various resources are assimilated by the firm and are used to create value for the customers and stakeholders. The manner in which value is created is determined by factors such as the core logic of the firm, the belief systems that exist within the firm, the cognitive environment that influences managerial decisions and the competencies that empower the creation of value from resources. Together, these factors can interact in a positive way leading to value creation and, thus, the business model of the particular firm. We infer that firm performance arises and depends on how successful the business model is in converting available resources into value.

In turbulent and competitive environments, firms with higher flexibility (Nisar *et al.*, 2011) perform better and the value of flexibility depends on factors of uncertainty in the competitive environment. Most business models follow a linear approach and have a typology that shows the model at a given point in time. The profitability of an operating model is constantly at risk due to technological innovations, regulatory changes, customer preferences and competition (exogenous factors). The annual business model appraisals that firms perform are out of place in the ever-evolving business scenario. There should be inherent qualities in the business model that allow it to respond to uncertainty and diminishing firm performance by adapting to the

factors that contribute to it. This means acquiring or changing the resources that made the model inefficient. This adjustment can be sustainable if the model is flexible enough to continuously assimilate and strengthen the acquired resources.

In a flexible business model, firm performance decreases as uncertainty increases, but not drastically as this uncertainty phase is overcome by constant flexible business practices followed by an adaptation phase, acquiring necessary resources that can overcome the uncertainty present in the business model. Firm performance increases as the acquired resources are transformed into additional value. Furthermore, as the competencies are strengthened, resources are assimilated into the business model due to the ingrained flexibility.

Adopting a cyclical firm performance appraisal inherent in the business model will enable the firm performance to return to growth levels in the case of threats from uncertainty. Business models that result in better performance use a set of methods in order to overcome uncertainty and keep the model dynamic and consequently becoming predictable for decision makers. Taking less time to overcome the uncertainty stage, acquiring and strengthening resources and competencies, can equal success. This can avoid imitation by competitors attracted to the marketplace success as distinctiveness can wear off fast.

3. Enhancing performance by knowledge brokering

We contemplate the idea of how firms systematically acquire resources in the form of ideas from a variety of disciplines, industries and contexts, and then combine the resulting lessons in new ways. Knowledge brokerage is made possible by the effective accumulation of external resources in the domains of uniqueness, networks, protection, competencies, assets, learning procedures, capabilities, activities/processes, and culture, etc. By using Schumpeter's (1934) basic concepts of entrepreneur and entrepreneurial behavior, "the carrying out of new combinations [of means of production and credit] we call 'enterprise'; the individuals whose function it is to carry them out we call 'entrepreneurs'", we can deduce that the "carrying out of new combinations" is the different allocation of resources of productive means that already exist in a specific economic system, and this employment of existing resources is the cause of development.

Applying Schumpeter's basic concepts of entrepreneurship to the airline industry may lead to the introduction of a new service or improvement in the quality of the service; introduction of a new business model, such as a low-cost model, opening of a new route, servicing a new airport, positioning for first-time flyers, etc.; securing a new source of supply, such as an online reservation system; carrying out a new organization of the industry, as with forming alliances; entering hitherto competitor dominated routes, etc. Knowledge brokerage relates to how the lack of these resources can be overcome by effectively using knowledge to develop efficient accumulation strategies.

The knowledge resources that a firm accumulates can greatly enhance the flexibility of the business model. We argue that flexibility is a core ingredient of performance heterogeneity among firms that seemingly have similar business models. In the process of resource accumulation, we propose two sources that firms can employ to gather resources. The intra-firm environment, which forms the resource base of business models from the same industry, and the inter-firm environment, which provides the resource base of business models from external industries. The more the

knowledge-based resource accumulation of the business model is spread across the inter and intra firm environments, the more exposed and open the business model is to the ideas generated in these environments, thus enriching the flow of ideas into the business model. The flexibility that the business model attains is determined by how efficiently resource accumulation is aligned with external environments. The more flexible the business model, the easier it is for firms to enable their business models to assimilate and create value out of these ideas. Thus, we infer that effective knowledge brokerage sets in motion a cyclical process that results in superior performance. We further explain this concept with examples from the airline industry in the cases of IndiGo airlines, Singapore airlines and Kingfisher airlines.

The airline industry is a good example of how a firm's business models (Nair *et al.*, 2011) assimilate and create value by knowledge brokerage from inter- and intra-industry environments. Singapore International Airlines (SIA) is a firm that looks actively to reduce costs (SIA, 2011), while maintaining its marginal value to customers. This is achieved via small incremental innovations, as well as sustained differentiation from competitors. Singapore Airlines has a Product Innovation Department that produces research on why people behave in a certain manner. The department studies the public's reactions and then makes a three-to-five year projection of what is likely to happen, so that the firm can better understand the needs of its customers. Some of this research has led to the development of Internet and phone check-in for all classes, and the full-size Space Bed. SIA is an airline that introduces innovations and keeps a close watch on the competition, always striving to achieve growth through practices that are even borrowed from other service industries such as banking, the hotel industry, retailing etc. They were pioneers in introducing amenities such as free drinks, headsets, onboard fax machines, individual video screens and telephones, "book the cook" service for special meals in first and business classes, fax and e-mail check-in, innovative cargo facilities, etc.

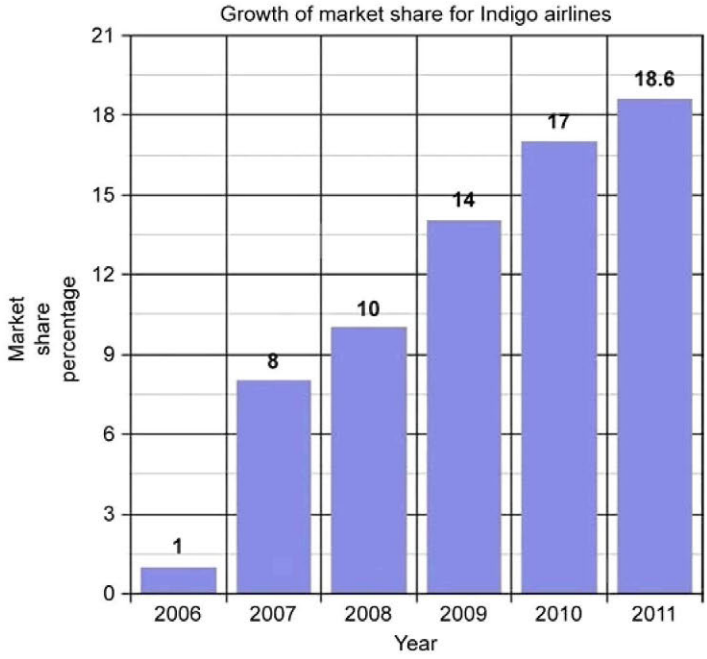
Firms should focus more on the inter-industry environments, where there is scope for acquiring new ideas that can yield outstanding performance improvements as competitors will be ill-equipped to handle the dynamic change required in their business models to incorporate such ideas. Airlines with a good brand presence invest in advertising to maintain or increase their brand's appeal, particularly in competitive markets lest they face the risk that the brand be perceived to have faded away. India's leading airline, Kingfisher, has set up a fully-fledged formal presence on the social media website Twitter. This initiative will make it easier for anyone to receive instant updates from Kingfisher Airlines, which opens up a new platform for the brand to actively converse with its customers. With the introduction of this service, Kingfisher Airlines joins a growing global band of savvy marketers who have recognized the power and reach of new media, such as social and community networking.

The intra-industry environments where firms from the same industry acquire their knowledge resources are easily imitable and the avenues of knowledge brokerage are frequently available. This can create incremental performance improvements as the industry remains vigilant to the strategies employed by other players in the same industry and competitors can easily imitate the successful ideas implemented by an innovator. Knowledge brokering strategies aligned to a business model will help to transform these avenues of incremental growth into improved performance opportunities by effectively combining the resulting lessons in new ways.

An example of intra-firm knowledge brokerage successfully leading to better performance is apparent in the case of IndiGo airlines in the Indian airline industry. Low-cost airlines the world over used to follow the Southwest Airlines model or the Ryanair model (Teece, 2009) for their business plan. Often these new airlines that started with an industry-proven business model involved less knowledge brokerage as the business models were blindly followed with less innovation and value addition, although the emergence of Southwest and Ryanair were great innovations in the airline industry (Williams and Baláž, 2009). A converse example of the lack of innovation among new entrants to the airline industry with a low-cost business model was IndiGo Airlines, which began operations in 2006. From the start, IndiGo followed a business model that acquired ideas regularly from players in the industry that followed different business models and innovatively integrated them into their own model, adding significant flexibility.

IndiGo is modeled on the US LCC Jetblue, without copying their business model as such due to the differences in the market, as mentioned above. Instead, they opted to be innovative and flexible with the established notion of the LCC business model. To deliver the service at the appropriate cost, and still make profits, IndiGo had to devise a model that depended on astute financial management and operational excellence. IndiGo ordered 100 Airbus A320 in 2005 and another 180 Airbus A320 in 2011 at huge discounts and then sold it to a leaser, only to subsequently lease back the aircraft immediately. In doing so, the firm is really renting the planes for a few years at a time, so that a leasing company bears the risk of any slump in the second-hand value of the aircraft. This practice could provide them with a premium of $5-7 million on an A320 aircraft, while paying a monthly lease rental of $400,000 a month. IndiGo even sold some of the aircraft pre-delivery to other organizations, undercutting the manufacturer price as they had obtained huge discounts initially due to the bulk order. The sale of aircraft yields were used to subsidize operations and see the airline through until it managed to break even. This shows better resource accumulation suited to reducing costs based on the LCC business model. While capitalizing on the idea of ordering new aircraft, selling it and leasing it back, taken from other airlines, they significantly improved on it by ordering an extraordinarily large number of aircraft as a single order and embedding this procedure into their business model, as it involves the arrival of a new aircraft every 20 days and will lead to a 280-plane fleet by 2025, according to industry sources. To put these data into perspective, Singapore airlines will only have 107 aircraft by 2012 and an order book of 68 additional aircrafts.

IndiGo leveraged the huge potential of the domestic market to form a cost-cutting partnership with suppliers such as Airbus, thus reducing its operational costs by buying aircraft in large numbers to ensure reduced prices and lower maintenance costs. This resulted in IndiGo becoming a part of the manufacturer's (Airbus') business model. This strategic partnership resulted in IndiGo having the second largest market share (Figure 1) and the best on-time performance within the industry. Following this improved performance, the management at IndiGo has further strengthened the partnership with Airbus by agreeing to purchase 180 passenger jets in the near future to increase its presence outside the domestic market. Having brand new aircraft enabled IndiGo to offer services that were comparable to those offered by full service carriers and gave it significant customer advantage over other low-cost carriers in the market.

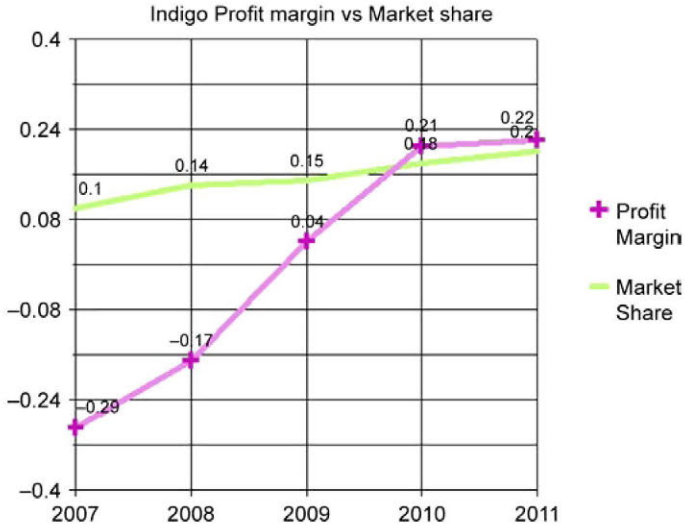


Another idea that the airline acquired from the industry was to invest heavily in staff training unlike other low-cost airlines. This enabled them to introduce concepts such as equipping check-in staff with hand-held scanners that allowed passengers without baggage to avoid the counter. The flight attendants manning the beverage carts addressed even economy class passengers by name, an aspect that is lacking in most full service carriers. Since 2008, when the firm registered its first profits under an environment of high fuel prices and the economic downturn faced by its competitors, Indigo's net income has grown more than five times from $20 million to more than $120 million, with an increase in market share from 10 percent to 19 percent in 2011 (Figure 2). IndiGo has been able to achieve this by a knowledge brokerage strategy by reinventing the first-time flyer segment in the Indian airline market by having a significantly flexible low-cost business model.

4. Discussion and conclusions

We set out to research the factors that influence the performance heterogeneity of seemingly similar business models in the same industry. The authors conceptualized the business model on a resource accumulation-based view and in the process established that the literature was lacking in models that explain the inherent level of flexibility that a business model needs in order to evolve to a state that can provide superior performance. The literature analysis illustrates that a firm operating a fixed, inflexible business model will fail in highly turbulent, competitive environments.

In order to carry out the research, the business model was conceptualized as a set of factors i.e. the core logic, belief systems, cognitive environments and competencies that effectively interact, leading to value creation from knowledge resources. This



definition leads us to a knowledge brokerage view of resource accumulation that creates value from the effective utilization of external knowledge resources through the medium of business models acquired from intra- and inter-firm environments.

The model arrives at a cyclical view of business model flexibility that the more the knowledge-based resource accumulation of the business model is spread across the inter and intra-firm environments, the more exposed and open the business model is to the ideas generated in these environments and thus better the performance of the business model. The flexibility that the business model attains is determined by how efficiently the resource accumulation is aligned with external environments. The case of IndiGo Airlines proves how a firm with an efficient knowledge brokerage strategy reinvented the first-time flyer segment in the Indian aviation market by attaining a significantly flexible low-cost business model, thereby achieving considerable performance levels in terms of market share. The knowledge brokerage at IndiGo is a perfect case that a firm can follow when it starts out in an already established industry, using an imitated business model such as the low-cost airline business model. IndiGo achieved better performance (in terms of market share and profits) than other low-cost players in the market because it was able to modify its business model from a purely low-cost one based on the Ryanair-Southwest Airlines one to an evolved business model that positioned itself differently within the industry space. The airline achieved this, not by its innovative resource base at the outset, but by effectively utilizing knowledge garnered from the inter- and intra-firm environments, i.e. from different business models, such as full service carrier models. This has immense potential in addressing the questions raised by several authors regarding the performance of firms that start out without any distinct resources of their own, but are in a position to attain performance through successful knowledge brokerage strategies. This model thus strives to explain the difference in performance heterogeneity in the same industry among players with seemingly similar business models. Thus, we see that knowledge brokerage can make an immense contribution to heterogeneity among business models.

The originality of the paper lies in the fact that it strives to effectively integrate the concepts of knowledge brokerage and business models from a resource accumulation-based view and simultaneously arrives at the performance heterogeneity of seemingly similar business models in the same industry. We expect the concept of knowledge brokerage from intra- and inter-firm environments to evolve as a major application in the improvement of performance of business models in firms. The study adds to the resource accumulation literature by explaining how resources can be effectively acquired and value can be created from a business model point-of-view.

We propose future research on developing models on the interaction between knowledge brokerage and business models, and how effectively they can be integrated with existing business models in different industries. Moreover, quantitative and empirical studies can be carried out to further the practical considerations that arise from using the model, in light of the financial implications of the attained inherent flexibility in the business model. The role of change managers in the firm who act as knowledge brokers with intra-firm environments are not defined properly in many industries and need a thorough analysis. The role of the cognitive environment, present in the business model in enabling the flexibility required and also in the smooth assimilation of gained knowledge represents another thought provoking research stream.

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